CLAIMS

What is claimed is:

1. A method for matching output impedance of a driver to a load impedance, comprising:

attaching an external impedance between an external contact and a first source potential, wherein the load impedance comprises the external impedance plus impedance of interconnections between an output terminal of the driver and the external impedance;

attaching an adjustable impedance between a second source potential and the output terminal of the driver;

obtaining a reference potential, wherein the reference potential has a value half-way between the first source potential and the second source potential; and

obtaining a load matching impedance by changing the adjustable impedance until the absolute value of the difference between voltage of the output terminal of the driver and the reference potential is less than a preselected value.

2. The method as recited in claim 1, wherein the adjustable impedance comprises a plurality of field effect transistors, wherein the field effect transistors have capability of being individually turned on and turned off.

3. The method as recited in claim 1, providing the first source potential is ground potential and the second source potential is a supply potential.

4. The method as recited in claim 1, providing the first source potential is a supply potential and the second source potential is ground potential.

5. The method as recited in claim 1, wherein the method step of obtaining the reference potential comprises the method steps of :

attaching one end of each of two matched resistors together;

attaching the other end of one of the matched resistors to the first source potential;

attaching the other end of the other matched resistor to the second source potential; and

obtaining the reference potential from the point of attachment of the two matched resistors.

6. The method as recited in claim 1, wherein the method step of obtaining the adjustable impedance comprises:

turning on and off field effect transistors until the absolute value of the difference between the potential of the output terminal of the driver and the reference potential is less than a preselected value.

7. The method as recited in claim 1, further comprising the method steps of:

repeating the method obtaining the load matching impedance for a preselected number of conducting traces, wherein the conducting traces have different length to width ratios;

based on the conducting trace length to width ratio of an additional driver, selecting the load matching impedance which provides the closest match of the output impedance to the load impedance for the additional driver; and

transferring an instruction to the additional driver to set the load matching impedance of the additional driver to the result of the method step of selecting the load matching impedance.

8. The method as recited in claim 7, wherein the method step of obtaining the adjustable impedance is performed via a compensation circuit, wherein the compensation circuit is capable of performing the method step of obtaining the adjustable impedance for the preselected conducting traces.

9. The method as recited in claim 7, wherein the adjustable impedance for at least one of the drivers comprises a plurality of field effect transistors, wherein the field effect transistors have capability of being individually turned on and turned off.

10. The method as recited in claim 1, further comprising the method steps of:

based on the conducting trace length to width ratio of the driver and on the conducting trace length to width ratio of an additional driver, computing the load matching impedance which provides the closest match of the output impedance to the load impedance for the additional driver; and

transferring an instruction to the additional driver to set the load matching impedance of the additional driver to the result of the method step of

computing the load matching impedance.

11. The method as recited in claim 10, wherein the method step of obtaining the adjustable impedance is performed via a compensation circuit, wherein the compensation circuit is capable of performing the method step of obtaining the adjustable impedance for the preselected conducting traces.

12. The method as recited in claim 10, wherein the adjustable impedance for at least one of the drivers comprises a plurality of field effect transistors, wherein the field effect transistors have capability of being individually turned on and turned off.

13. An electronic circuit for matching output impedance of a driver to a load impedance, comprising:

an external impedance attached between an external contact and a first source potential, wherein the load impedance comprises the external impedance plus impedance of interconnections between an output terminal of the driver and the external impedance;

an adjustable impedance attached between a second source potential and the output terminal of the driver; and

a reference potential source, wherein the reference potential obtained from the reference potential source has a value substantially half-way between the first source potential and the second source potential and wherein a load matching impedance is obtainable by changing the adjustable impedance until the absolute value of the difference between voltage of the output terminal of the driver and the reference potential is

less than a preselected value.

14. The electronic circuit as recited in claim 13, wherein the adjustable impedance comprises a plurality of field effect transistors, wherein the field effect transistors have capability of being individually turned on and turned off.

15 The electronic circuit as recited in claim 13, wherein the first source potential is ground potential and the second source potential is a supply potential.

16. The electronic circuit as recited in claim 13, wherein the first source potential is a supply potential and the second source potential is ground potential.

17. The electronic circuit as recited in claim 13, wherein the reference potential source comprises :

two matched resistors, wherein one end from one of the matched resistors is connected to one end of the other matched resistor, the other end of one of the matched resistors is connected to the first source potential, the other end of the other matched resistor is connected to the second source potential, and the reference potential is obtained at the point of attachment of the two matched resistors.

18. The electronic circuit as recited in claim 13, further comprising:

a compensation circuit, wherein the compensation circuit comprises a comparator having a first input, a second input, and an output, wherein the compensation circuit comprises a control circuit, wherein the first

input of the comparator is connected to the output terminal of the driver and the second input of the comparator is connected to the reference potential source, wherein the output of the comparator is attached to an input of the control circuit, wherein, for a plurality of conducting traces having different length to width ratios, the control circuit is capable of changing the adjustable impedance until the absolute value of the difference between the potential of the output terminal of the driver and the reference potential is less than a preselected value, wherein the compensation circuit is connected to at least one additional driver, wherein the compensation circuit is capable of selecting the adjustable impedance which provides the closest match of the output impedance of the additional driver to the load impedance for the additional driver based on the conducting trace length to width ratio of the additional driver, and wherein the compensation circuit is capable of instructing the additional driver to set the load matching impedance of the additional driver to the value of the selected adjustable impedance.

19. The electronic circuit as recited in claim 13, further comprising:

a compensation circuit, wherein the compensation circuit comprises a comparator having a first input, a second input, and an output, wherein the compensation circuit comprises a control circuit, wherein the first input of the comparator is connected to the output terminal of the driver and the second input of the comparator is connected to the reference potential source, wherein the output of the comparator is attached to an input of the control circuit, wherein, for a conducting trace having a known length to width ratio, the control circuit is capable of changing the adjustable impedance until the absolute value of the difference between the potential of the output terminal of the driver and the reference potential is less than a preselected value, wherein the compensation

circuit is connected to at least one additional driver, wherein the compensation circuit is capable of computing the adjustable impedance which provides a match of the output impedance of the additional driver to the load impedance for the additional driver based on the conducting trace length to width ratio of the additional driver, and wherein the compensation circuit is capable of instructing the additional driver to set the load matching impedance of the additional driver to the value of the selected adjustable impedance.

20. The electronic circuit as recited in claim 13, further comprising:

an open circuit detection circuit, wherein the open circuit detection circuit is capable of detecting an open circuit at the external contact; and

a control circuit, wherein the control circuit receives input from the open circuit detection circuit and wherein, when the external contact is an open circuit, the control circuit is capable of changing the adjustable impedance to a preselected value.